ETCR080 Large Caliber High Accuracy Clamp Current Sensor

User Manual

Thanks for your purchase of ETCR080 Large Caliber High Accuracy Clamp Current Sensor of our company. For better use of the product, please make sure:

---to read this user manual in details.

---to abide by the safety regulations and precautions strictly.

- **u** Under any circumstance, it shall pay special attention on safety in use of this sensor.
- **u** Pay attention to words and symbols stick on the panel.
- **u** Keep the pliers clean, maintenance regularly.
- **u** Stop using the sensor when there is a rupture or break.
- **u** Please don't keep or store the sensor in the spot with high-temperature and moisture, or condensation, and under direct daylight radiation for a long time.
- **u** This sensor is only to be used, disassembled, and repaired by qualified personnel with authorization.
- **u** When it may cause hazard by continuous use for the reason of the sensor itself, it shall immediately stop using it and deposit it at once, leaving it for disposal by authorized agency.
- **u** For risk of danger icon in manual , users must perform safety operations strictly in compliance with the manual content.

Ⅰ. Introduction

ETCR080 Large Caliber High Accuracy Clamp Current Sensor is used for measurement of AC current, leakage current, high order harmonic current, phase, power energy, power, power factor, adopting the latest CT technology. Its large caliber 80mm×80mm can clamp electric cable of 80mm diameter, or 96mm×4mm flat cable and steel earth wires. It is portable, no need to disconnect the measured circuits, non-contact, safe and fast, can be connected with phase detection analyzer, industrial control equipment, data recorder, oscilloscope, harmonic analyzer, electric power quality analyzer, high precision digital multi-meter, etc. Widely applied in electricity, communication, meteorology, railway, oilfield, construction, measurement, scientific and research teaching unit, industrial and mining enterprises.

ETCR080 Large Caliber High Accuracy Clamp Current Sensor's clamp core is made of special alloy, adopt the latest magnetic shielding techniques, can almost shield the influence from external magnetic field, to ensure the high precision, high stability and high reliability of perennial uninterrupted measurement.

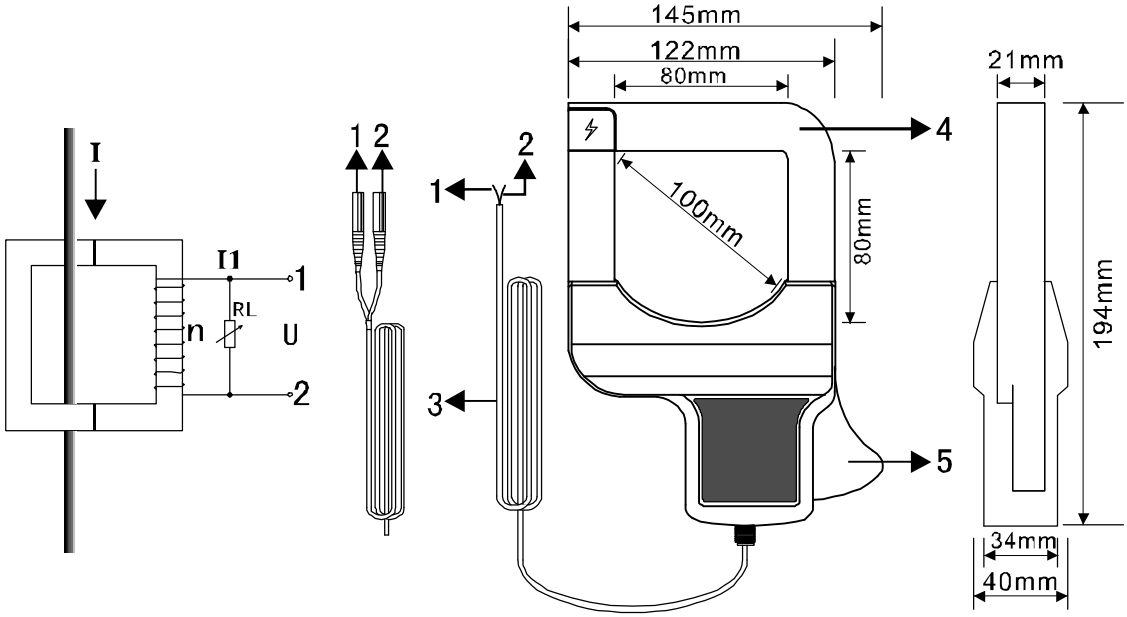
Ⅱ. Technical Specifications

Function	Measurement of AC current, leakage current, high order harmonic current, phase, power energy, power, power factor
Test mode	Clamp CT
Clamp Size	80mm×80mm (can clamp electric cable of 80mm diameter, or 96mm×4mm flat cable and steel earth wires)
Range	0-2000A
Resolution	0.01mA
Accuracy	±1.0%FS(50Hz/60Hz; 23℃±2℃, below 70%RH, keep the wire be in the center of clamp)
Coils Turn	1000:1 (2000:1 or 3000:1 is optional)
Phase Error	≤3°(50Hz/60Hz; 23℃±2℃)
Reference Load	RL: 0-200mA≤3kohm; 0-20A≤30ohm; 0-2000A≤0.3ohm
Output Mode	Current induction output
Output Interface	2 bare wires or standard multimeter plug
Output Wire Length	2m
Electric Field Interference	About 10mA when the external electric field 100A, 10mm nearby
Measured Wire Position	Approximately in the geometric center of the clamp

Current Frequency	45Hz-60Hz (the measured current frequency)
Frequency Characteristics	10Hz-100kHz
Line Voltage	Under 600V AC measurement
Dimension	194mm×145mm×40mm
Weight	780g
Working Environment	-20℃-50℃; below 80%rh
Storage Environment	-10℃-60℃; below 70%rh
Insulation Strength	AC3700V/rms (between core and shell)
Safety Rules	IEC1010-1, IEC1010-2-032, Pollution degree 2, CAT Ⅲ(600V)

Ⅲ. Principle and Structure

The sensor induced output a current **I1**, the current **I1** generate voltage **U** on the external sampling load resistance **RL**, so the measured current **I** can be calculated by measuring **I1** or **U**. Among them, **I=n×I1**; **U=I1×RL**. **n** is the coils turn (current ratio).



1. Coil tap 2. Coil tap 3. Output wire (2m) 4. Clamp 5. Trigger (open and close the clamp)
(Note: The coil tap can be bare wire or standard multimeter plug)

⚠	**Clamp live wire or null line separately to measure the current of this line. (Note: single wire)**
	Clamp live wire and null line together to measure leakage current of single phase. (Note: 2 wires)
	Clamp earth wire to measure grounding line leakage current of electrical equipment. (Note: single wire)
	Clamp three wires together to measure the leakage current of three phase three wires.（Note: 3 wires）
	Clamp four wires together to measure the leakage current of three phase four wires.（Note: 4 wires）

⚠ ***Manufactured by***

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